20SSP48

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION MAY 2025
(Eighth Semester)

Branch – **SOFTWARE SYSTEMS (Five Year Integrated)**

PRINCIPLES OF COMPILER DESIGN

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. The term _____ is used for translators that take programs in one high-level language into equivalent programs in another high-level language.
   (i) Preprocessor (ii) compiler
   (iii) Assembler (iv) word processor

2. The lexical phase is also termed as _____
   (i) Decoder (ii) syntax analyzer
   (iii) parser (iv) scanner

3. A LR parser consist of two parts , a driver routine and a _____ table.
   (i) symbol (ii) parsing
   (iii) book (iv) entry

4. The general form of a three-address code is _____.
   (i) B operator C = A (ii) A = B operator C
   (iii) A = B operator C operator D (iv) A= B

5. DAG stands for
   (i) Directed Asynchronous Graph (ii) Directed Acyclic Graph
   (iii) Delta Alpha Graph (iv) Directed arc graph

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a. Illustrate use of Language Processor.

OR

b. Discuss about Linker and Loader.

7 a. Construct NFA using the Given Regular Expression (0/1)* 01. Draw Transition table.

OR

b. NFA using the Given Regular Expression (a/b)* abb. Draw table. Explain about predictive parsing.

8 a. Discuss the Function of LR parser.

OR

b. Explain Computation of CLOSURE().

Cont...

9 a. Illustrate Syntax directed definition.

OR

b. Explain Indirect Triple with example.

10 a. Discuss about Basic Block.

OR

b. Illustrate Handling Shift reduce error.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Elucidate Lexical Phase of Compilation.

OR

b Analyze the Code Generation Phase.

12 a. Analyze Shift reduce Parsing with example.

OR

b. Elucidate Implementation of Lexical Analyzer.

13 a Elucidate Canonical Collection of LR (0) items.

OR

b Construct SLR parsing table using suitable grammar.

14 a Elucidate Implementation of Syntax Directed Translations.

OR

b Analyze the Translation of Expressions.

15 a Elucidate DAG representation of Basic Blocks.

OR

b Enumerate Steps in Code generation Algorithm.

Z-Z-Z END